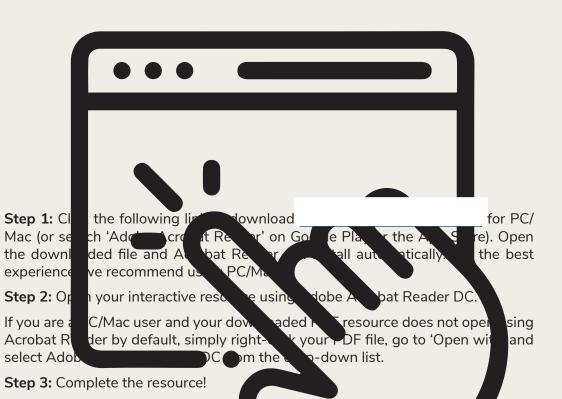
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Your Turn

1. Write down the percentage multipliers for:

a.	a 10% increase	c.	a 10% decrease	e.	a 2.5% increase
	100 + 10 = 110%		100 - 10 = 90%		100 + 2.5 = 102.5%
	110 ÷ 100 = 1.1		90 ÷ 100 = 0.9		102.5 ÷ 100 = 1.025
b.	a 17% increase	d.	a 32% decrease	f.	a 1.2% decrease
	100 + 17 = 117%		100 - 32 = 68%		100 - 1.2 = 98.8%
	117 ÷ 100 = 1.17		68 ÷ 100 = 0.68		98.8 ÷ 100 = 0.988

2.

	0.9 × 74 = 66.6		0.979 × 86 = 84.194		0.01 × 130 = 1.3
b.	Decrease 74 by 10%	d.	Decrease 86 by 2.1%	f.	Decrease 130 by 99%
	1.05 × 210 = 220.5		1.25 × 19 = 23.75		1.5 × 97 = 145.5
a.	Increase 210 by 5%	c.	Increase 19 by 25%	e.	Increase 97 by 50%

3. The price of a car service is £320. It increases by 15%. Work out the new price of a car service.

1.15 × 320 = £368

4. A pair of jeans cost £32. They are reduced in a sale by 12%. Work out the sale price of the jeans.

0.88 × 32 = £28.16

- I invest £800 in a bank account which pays
 1.25% per annum.
 - a. Work out how much money I will have in the account after one year.

1.0125 × 800 = £810

b. Work out how much money I will have in the account after two years. Hint: use the amount after year 1 as the original.

1.0125 × 810 = £820.13 (correct to the nearest penny)

Challenge

Grace sees a special offer in a shop.

Special Offer Games Console £280 Game £50 6% discount if bought together Work out how much money she will save if she buys the items together instead of separately.

280 + 50 = £330 0.94 × 330 = £310.20 330 - 310.20 = £19.80

Percentage Increase and Decrease

Calculators Allowed

Prior Knowledge:

Before attempting this sheet, students should be able to calculate a percentage increase/decrease by calculating the percentage and then adding to / subtracting from the original amount.

Percentage Multipliers

Percentage multipliers can be used to find percentages of an amount.

For example:

Find 7% of 30.

7% as a decimal is 7 ÷ 100 = 0.07 This is the multiplier we use to find 7% of 30. 0.07 × 30 = 2.1

Percentage Increase and Decrease

To increase or decrease by a percentage, begin by either adding or subtracting the relevant percentage from 100%, then find the multiplier.

Example 1

Increase 50 by 20%.

Since we are increasing, we want to add 20% to 100%.

100 + 20 = 120%

We need to find 120% of 50.

120 ÷ 100 = 1.2

This is the multiplier we use to find 120% of 50.

1.2 × 50 = 60

Example 2

A video game usually costs £40. It is reduced by 6% in the sale. Work out the sale price of the game.

This time, we are decreasing the amount so we want to subtract 6% from 100%.

100 - 6 = 94%

We need to find 94% of £40.

94 ÷ 100 = 0.94

This is the multiplier we use to find 94% of 40.

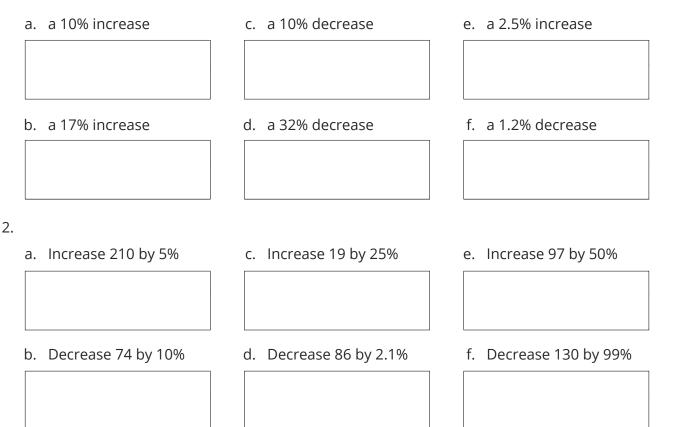
0.94 × 40 = £37.60

Note that, when we are working with money, we give our answers correct to 2 decimal places.

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Your Turn

1. Write down the percentage multipliers for:



- 3. The price of a car service is £320. It increases by 15%. Work out the new price of a car service.
- 4. A pair of jeans cost £32. They are reduced in a sale by 12%. Work out the sale price of the jeans.
- I invest £800 in a bank account which pays
 1.25% per annum.
 - a. Work out how much money I will have in the account after one year.
 - b. Work out how much money I will have in the account after two years. Hint: use the amount after year 1 as the original.

Challenge

Grace sees a special offer in a shop.

Special Offer

Games Console £280

Game £50

6% discount if bought together

Work out how much money she will save if she buys the items together instead of separately.

Percentage Increase and Decrease

Calculators Allowed

Prior Knowledge:

Before attempting this sheet, students should be able to calculate a percentage increase/decrease by calculating the percentage and then adding to / subtracting from the original amount.

Percentage Multipliers

Percentage multipliers can be used to find percentages of an amount.

For example:

Find 7% of 30.

7% as a decimal is 7 ÷ 100 = 0.07 This is the multiplier we use to find 7% of 30. 0.07 × 30 = 2.1

Percentage Increase and Decrease

To increase or decrease by a percentage, begin by either adding or subtracting the relevant percentage from 100%, then find the multiplier.

Example 1

Increase 50 by 20%.

Since we are increasing, we want to add 20% to 100%.

100 + 20 = 120%

We need to find 120% of 50.

120 ÷ 100 = 1.2

This is the multiplier we use to find 120% of 50.

1.2 × 50 = 60

Example 2

A video game usually costs £40. It is reduced by 6% in the sale. Work out the sale price of the game.

This time, we are decreasing the amount so we want to subtract 6% from 100%.

100 - 6 = 94%

We need to find 94% of £40.

94 ÷ 100 = 0.94

This is the multiplier we use to find 94% of 40.

0.94 × 40 = £37.60

Note that, when we are working with money, we give our answers correct to 2 decimal places.

Your Turn

1. Write down the percentage multipliers for:

	a. a 10% increase	c. a 10% decrease	e. a 2.5% increase	
	b. a 17% increase	d. a 32% decrease	f. a 1.2% decrease	
2.	a. Increase 210 by 5%	c. Increase 19 by 25%	e. Increase 97 by 50%	
	b. Decrease 74 by 10%	d. Decrease 86 by 2.1%	f. Decrease 130 by 99%	
3.	The price of a car service increases by 15%. Work out the of a car service.	e new price 1.25% per ar a. Work out) in a bank account which pays nnum. t how much money I will have count after one year.	
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	Challenge Grace sees a special offer in a s	shop.		
	Special Offer Games Console £280	Work out how much m the items together inst	noney she will save if she buys tead of separately.	